

MONARC Simulation System

Distributed Computing Model Studies, Monitoring and Load Balancing Tools by Iosif Legrand, Caltech

Nov 1998	Started working at Caltech
Dec 1998	First prototype of the simulation tool using Java 1.1 http://www.cern.ch/MONARC/sim_tool/Slides/il_monarc_dec.pdf
May 1999	First release of the simulation tool based on Java 1.2 http://www.cern.ch/MONARC/sim_tool/Slides/monarc_may.pdf
Jun 1999	Monarc - mid project report. http://monarc.web.cern.ch/MONARC/docs/progress_report/ProgressReport.html Presentation of the simulation tool at LCB http://www.cern.ch/MONARC/sim_tool/Slides/monarc_simulation_lcb0699.ppt
Sep 1999	Presentation of the simulation tool at LHC Computing Workshop http://www.cern.ch/MONARC/sim_tool/Slides/marseille_lhcc_09_99.ppt
Dec 1999	Update of the Simulation tool http://www.cern.ch/MONARC/sim_tool/ http://home.cern.ch/clegrand/MONARC/CHEP2k/sim_chep.pdf
Jan 2000	Monarc Phase 3 LOI http://monarc.web.cern.ch/MONARC/docs/phase3/phase3_loi.html
Feb 2000	SNMP based monitoring prototype http://home.cern.ch/clegrand/MONARC/SnmpMonitor/snmp_mon.ppt
Mar 2000	Monarc - Phase 2 Report http://www.cern.ch/MONARC/docs/phase2report/Phase2report.pdf
May 2000	CMS HLT - simulation http://www.cern.ch/MONARC/sim_tool/Publish/CMS/publish/ http://home.cern.ch/clegrand/MONARC/CMS_HLT/sim_cms_hlt.pdf
June 2000	Tape usage study http://www.cern.ch/MONARC/sim_tool/Publish/TAPE/publish/
Aug 2000	Update of the Simulation tool for large scale simulations.

http://home.cern.ch/clegrand/MONARC/WSC/wsc_final.pdf

(to be presented at the IEEE Winter Simulation Conference: WSC2000)

<http://home.cern.ch/clegrand/MONARC/ACAT/sim.ppt>

- Oct 2000** A study in using SONN for job scheduling
http://www.cern.ch/MONARC/sim_tool/Publish/SONN/publish/
<http://home.cern.ch/clegrand/MONARC/ACAT/sonn.ppt>
- Nov 2000** Update of the CMS computing needs.
Based on the new data and requirements to update the basic models for the CMS computing.
- Dec 2000** Simulation of the current CMS Higher Level Trigger production.
- Jan 2001** Update of the Monarc simulation tool.
Plan to have a new release of the tool which will include dynamic scheduling and replication modules (policies), and to improve the documentation.
- Feb 2001** The role of tapes in Tier1-Tier2 centers.
More elaborate studies to describe Tier2-Tier1 interaction and to evaluate the data storage needs.
- May 2001** Complex Tier0 - Tier1 - Tier2 simulation.
Study the role of the Tier2 centers.
The aim is to perform a complete CMS data processing scenario including all the major tasks distributed among regional centers.
- Jul 2001** Real SONN module for job scheduling implemented based on Mobile agents.
Create a Mobile Agents framework able to provide the basic mechanism for scheduling between regional centers.
- Sep 2001** Add monitoring agents for network and system states based on (SNMP).
Collect system dependent parameters using SNMP and integrate them into the mobile agents used for scheduling.
- Dec 2001** Study of the correlation between data replication and job scheduling.
Combine the scheduling policies with data replication to optimize different cost" functions. Integrate this into the Mobile Agents framework.